

SOFTWARE ENGINEERING-I

BY

SAID UL ABRAR

LECTURER IN ICS/IT

THE UNIVERSITY OF AGRICULTURE PESHAWAR.

# Week 3

## Prescriptive Process Models

Waterfall Model

-Incremental Process Model

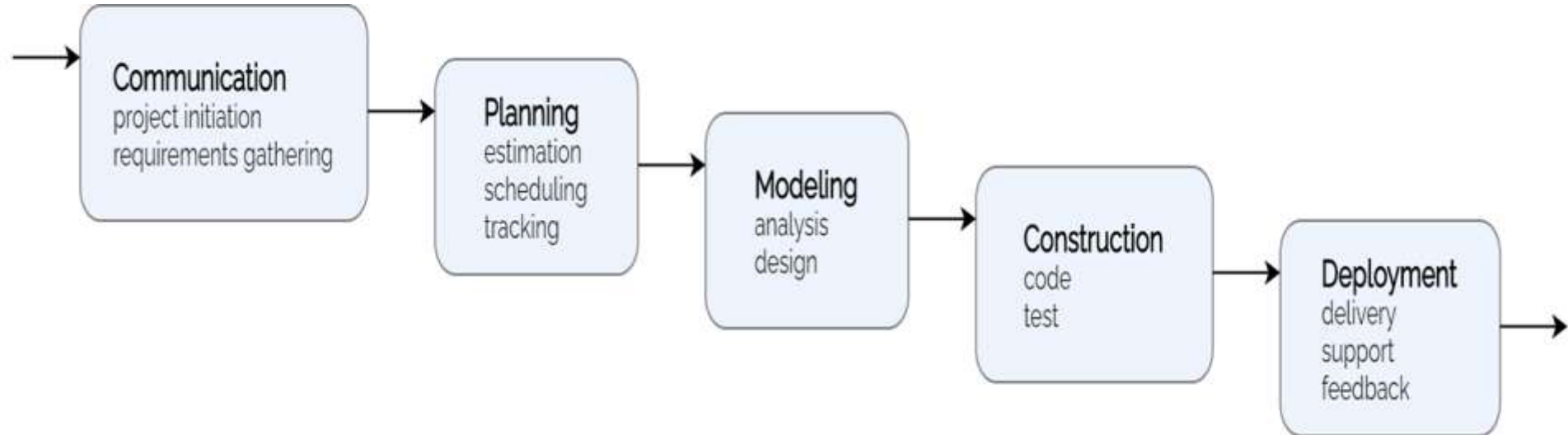
# Prescriptive Process Models

- Prescriptive process models prescribe a set of **framework and other activities**, quality assurance points, and **software process-related** elements.
- They define a workflow among these elements that shows their inter-relationship.
- The process models described here are,
  - Waterfall Model.
  - Incremental Process Model.

# Waterfall Model

- The waterfall model is also called as '**Linear sequential model**' or '**Classic life cycle model**'.
- In this model, each phase is fully completed before the beginning of the next phase.
- This model is used for the small projects.
- In this model, feedback is taken after each phase to ensure that the project is on the right path.
- Testing part starts only after the development is complete.

# Diagram of waterfall model



# Advantages of waterfall model

- The waterfall model is simple and easy to understand, implement, and use.
- All the requirements are known at the beginning of the project, hence it is easy to manage.
- It avoids overlapping of phases because each phase is completed at once.
- This model works for small projects because the requirements are understood very well.
- This model is preferred for those projects where the quality is more important as compared to the cost of the project.

# Disadvantages of the waterfall model

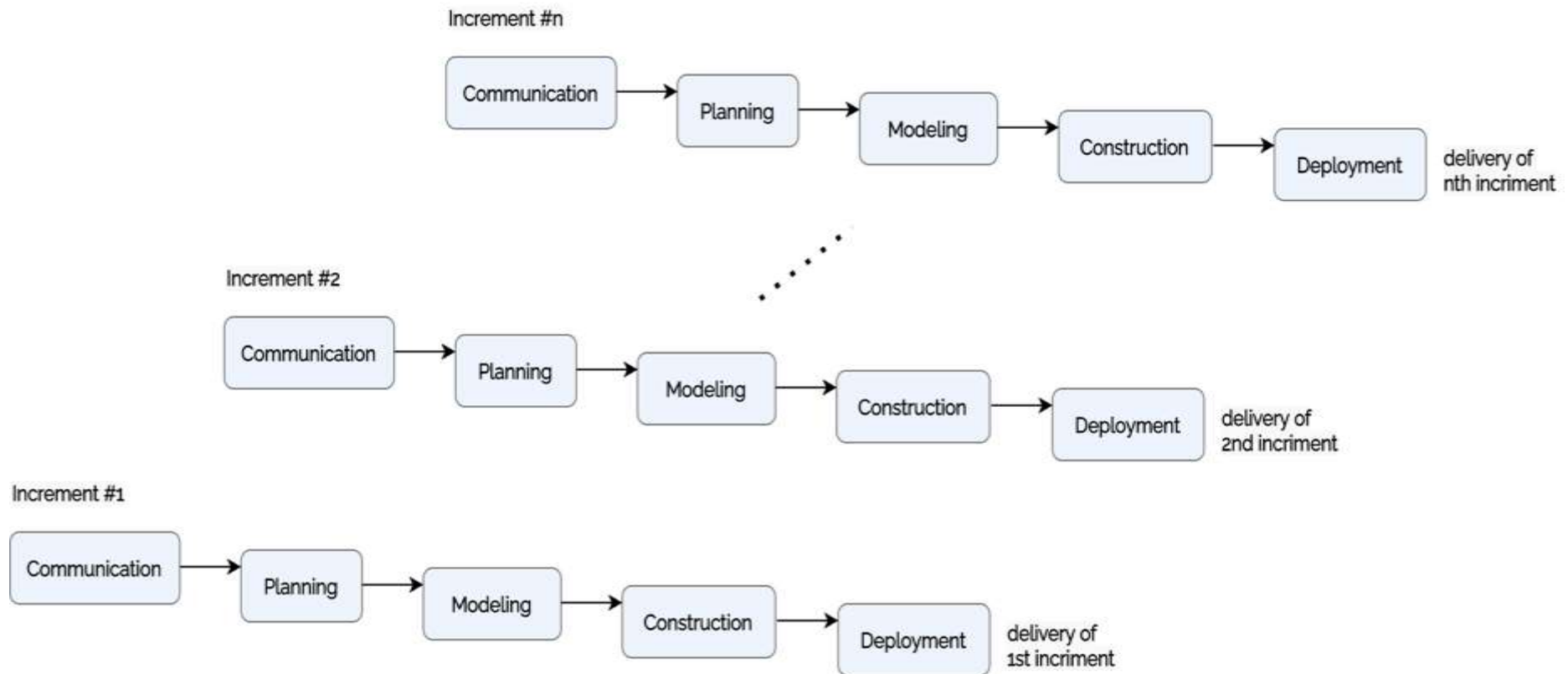
- This model is not good for complex and object oriented projects.
- It is a poor model for long projects.
- The problems with this model are uncovered, until the software testing.
- The amount of risk is high.

# Incremental Process model

- The incremental model combines the elements of waterfall model and they are applied in an iterative fashion.
- The first increment in this model is generally a core product.
- Each increment builds the product and submits it to the customer for any suggested modifications.
- The next increment implements on the customer's suggestions and add additional requirements in the previous increment.
- This process is repeated until the product is finished.



# Diagram of Incremental Process model



# Advantages of incremental model

- This model is flexible because the cost of development is low and initial product delivery is faster.
- It is easier to test and debug during the smaller iteration.
- The working software generates quickly and early during the software life cycle.
- The customers can respond to its functionalities after every increment.

# Disadvantages of the incremental model

- The cost of the final product may cross the cost estimated initially.
- This model requires a very clear and complete planning.
- The planning of design is required before the whole system is broken into small increments.
- The demands of customer for the additional functionalities after every increment causes problem during the system architecture.